

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P13819PCDK	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/DK 03/00037	International filing date (day/month/year) 22 January 2003	(Earliest) Priority Date (day/month/year) 22 January 2002
Applicant Rasmussen, Henning Baltzer		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

Reinforcement unit for a footing element of a foundation pile, the foundation pile and method for placing those.

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1C

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

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International application No.
PCT/DK 03/00037**Box I** Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see extra sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: **1-33, 35-36**

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

I. Claims 1-33, 35-36 directed to a reinforcement unit for reinforcing a footing element of a foundation pile, the foundation pile and the method for placing those.

II. Claim 34, dependent to claim 26-28, is in its characterising part directed to a method for formation of a cavity in connection with a lower part of a foundation pile.

The "special technical feature" of group I is a reinforcement unit for reinforcing a footing element of a foundation pile, which reinforcement unit is connected to the foundation pile by one or more tension members. The search has revealed that claims 1, 13 and 26 are not considered to involve an inventive step since what is claimed in claims 1, 13 and 26 is considered to be disclosed in document US5975808A in combination with what is revealed in document US3276173A (claims 1 and 13) and in document SE515997C2 (claim 26).

Consequently, the common features in groups I and II (a reinforcement unit and tension members) are not special technical features within the meaning of PCT Rule 13.2, second sentence, since they make no contribution over the prior art.

Therefore, there is no other feature common to the claims in groups I and II. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen.

Consequently it appears that, *à posteriori*, groups I and II do not satisfy the requirements of unity of invention.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC7: E02D 5/44, E02D 5/54, E02D 5/74

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: E02D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5975808 A (Y. FUJITA), 2 November 1999 (02.11.99), column 1, line 42 - column 2, line 48; column 3, line 21 - line 67; column 5, line 54 - column 6, line 3 --	1-14,16, 18-20,22-26, 28-36
Y	US 3276173 A (K.M. BOWMAN ET AL), 4 October 1966 (04.10.66), column 1, line 13 - line 17; column 3, line 64 - line 71, figures 1-10 --	1-14,16, 18-20,22-26, 30-32
Y	SE 515997 C2 (SOILEX AB), 5 November 2001 (05.11.01), page 1, line 14 - line 25, figures 1-5 --	1,13,26, 28-29,34

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

11 June 2003

Date of mailing of the international search report

13-06-2003

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International application No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2008233 A (KANJANAVANIT, R.), 9 May 1969 (09.05.69), page 6, line 31 - line 38 --	33,35-36
A	GB 1465866 A (MANNESMANNRÖHREN-WERKE AG), 2 March 1977 (02.03.77), page 1, line 33 - line 49; page 1, line 85 - line 96, figures 1-2 --	1-36
A	US 3924371 A (R.A. KIDWELL), 9 December 1975 (09.12.75), the whole document --	1-36
A	DE 896328 C (W. FEUERBACH), 12 November 1953 (12.11.53), page 2, line 25 - line 75, figures 1-3 --	14,27
A	US 3935912 A (M. SHIBATA), 3 February 1976 (03.02.76), figures 7-12 --	34-36
A	US 4000623 A (P. MEARDI), 4 January 1977 (04.01.77), column 2, line 15 - line 44, figures 2-4 --	1-6
A	US 2947149 A (L.J. BARKLEY, JR), 2 August 1960 (02.08.60), the whole document -- -----	1-36

INTERNATIONAL SEARCH REPORT

Information on patent family members

29/04/03

International application No.

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Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	5975808	A	02/11/99	NONE	
US	3276173	A	04/10/66	NONE	
SE	515997	C2	05/11/01	SE 0003659 A	05/11/01
FR	2008233	A	09/05/69	CA 919440 A	23/01/73
				DE 1923227 A	27/11/69
				GB 1245591 A	08/09/71
				NL 6907212 A	12/11/69
				SE 362461 B	10/12/73
				US 3832859 A	03/09/74
GB	1465866	A	02/03/77	DE 2436093 A	12/02/76
				NL 7508542 A	27/01/76
				NO 752508 A	27/01/76
US	3924371	A	09/12/75	NONE	
DE	896328	C	12/11/53	NONE	
US	3935912	A	03/02/76	US 4015433 A	05/04/77
US	4000623	A	04/01/77	BR 7503427 A	25/05/76
				CH 587969 A	31/05/77
				DE 2523988 A,C	18/12/75
				IT 1017641 B	10/08/77
				SE 407955 B,C	30/04/79
				SE 7506192 A	01/12/75
				SU 651717 A	05/03/79
US	2947149	A	02/08/60	NONE	